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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: Rentokil (Va. Wood Preserving Co.): Ecological Justification for Emergency Removal Effort

DATE: 11-13-91

FROM: Robert S. Davis, Biologist (3HW15)
Technical Support Section

TO: Andrew Palestini, RPM (3HW24)
Virginia/West Virginia Section
And
Jerald Heston, OCS (3HW32)
Western Response Section
Removal Enforcement Section

Habitat impacts have occured and will continue as a direct result of runoff of contaminants from the site. Below is a discussion of the habitat values as described in the information to date, supplemented by members of BTAG, and the areas of concern raised with regard to specific contaminants.

Contaminants of Ecological Concern:

Arsenic, chromium, and copper are known to be phytotoxic at levels found in the soil, water, and sediment of the area. While zinc is not at the upper range of the phytotoxicity range, it is within the low range and should be considered along with the other metals.

The surface waters and sediments are contaminated with several organic compounds in the range considered toxic to aquatic fauna. Arsenic, chromium, copper, and zinc are the inorganic contaminants and acenaphthene, fluoranthene, naphthalene, and dioxin are organic compounds identified, though not found in water, are found in sediment.

Soils on site are very high in all the contaminants associated with the site and represent the source of contamination in the runoff to the receiving stream.

Ecological Resources:

The immediate vicinity of the site includes both wetlands and intermittent stream habitat. The wetlands may be habitat for endangered species known to live in the area: the Swamp Pink, (Heleonias bullata); and the eastern tiger salamander, (Ambustoma tigrinum).

Surface flows from the site ultimately feed the Chickahominy River which is considered to be a high quality habitat by the Fish and wildlife Service (FWS). The ecological values are represented both by aquatic as well as migratory and resident avian populations.

In addition, the National Oceanographic and Atmospheric Administration (NOAA) recognizes the River as a spawning grounds for several marine species.

Conclusions:

The contaminants carried by the runoff from the site are both acutely and chronically toxic at certain levels. At levels associated with the site, chronic toxicity to both flora and fauna is of main concern and poses a continuing threat as long as runoff is left uncontrolled. Talley's Pond and the receiving stream currently show contaminants from the site at known chronic toxicity levels and continued contributions will reduce diversity, density, and abundance of members of the ecosystem. In addition, quantities known to be at acute toxicity levels are being approached by these contaminants as well. If these levels are reached then complete loss of the ecosystems in its current state will occur.

The habitat associated with the runoff stream is mixed intermittent stream and wetlands and is subject to the contamination carried by the runoff. These resources are under immediate threat from the site. In this area, the wetlands resources found along the receiving stream will be harmed and recovery from the insult will be slow and incomplete without reduction or elimination of the contaminants carried by the runoff. In addition, amphibian, fishery, and benthic resources will be directly impacted and recovery to prior levels is not expected to be complete.

It is clear that runoff from the site is the source of contamination to off-site resources for a distance downstream, at least as far as Talley's Pond, located 1.6 kilometers down gradient. The aquatic and benthic resources of Talley's Pond are be Subjected to elevated and increasing levels of chronically toxic contaminants. They will not initiate recovery until the source is cut off.

Downstream resources of the Chickahominy are considered to be of high value by both the FWS and NOAA and are under threat by contaminants carried downgradient. Both the freshwater and marine species using these area for both spawning and foraging will be irreparably harmed without the cessation of contaminants from the site. Copper and zinc are of special concern to marine resources, as their chronic toxicities for these contaminants are higher by comparison than they are to fresh water organisms. The proposed action will secure the welfare of the resources under threat.

The interim procedures to control runoff proposed by the PRP are considered to be sufficient to curtail additional contamination by all but the extreme flows. The results will be foreclosure of any damage over and above that which has already occurred.

If you need additional specifics, please do not hesitate to call me on 3155.